



PHYSICIAN

PAYMENT REVIEW

COMMISSION



**VARIATION IN MEDICARE
GLOBAL SERVICE POLICIES:
Relationship to Current Payment and
Implications for a Fee Schedule**



NOVEMBER 1989



BACKGROUND PAPER

NO. 89-2

RA
412.3
.V37
1989

**VARIATION IN MEDICARE
GLOBAL SERVICE POLICIES:**
Relationship to Current Payment and
Implications for a Fee Schedule

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ABSTRACT

This paper reports the results of a survey documenting extensive variation in the component services Medicare carriers include in their global fees for each of four common operations. Although payment for each of the operations also varies substantially among Medicare carrier areas, differences in payment are not positively correlated with the extent of services included in the surgical global fee. A Medicare fee schedule based on resource costs could rationalize the current pattern of payments. But to ensure equitable payment in all Medicare carrier areas, a national fee schedule would require the adoption of a uniform global service policy. The Physician Payment Review Commission, with the help and unanimous approval of a panel of surgeons and Medicare carrier representatives, recently developed such a policy. Each component of this standardized policy closely parallels the current practice of the majority of Medicare carriers.

I. INTRODUCTION

Surgical services have traditionally been paid on the basis of a global fee that includes not only the operation, but also certain perioperative technical procedures and evaluation and management services. The current Medicare program, however, does not have a uniform policy specifying which component services should be included in the global fee and which should be paid separately. The American Medical Association's Current Procedural Terminology (CPT), which is used by the Health Care Financing Administration (HCFA) to describe physician services, defines the global service as the operation, local anesthesia, and uncomplicated postoperative care. But HCFA, in accordance with the original intent of the Medicare program to accommodate differences in local practice, allows carriers considerable discretion in interpreting this definition. Carriers are permitted to specify intraoperative and postoperative services independently and to expand the CPT definition by including preoperative care and services related to complications. If carriers use this discretion, global service policies could vary widely and each surgical code could represent a different combination of services in different carrier areas.

Multiple policies can, theoretically, be accommodated under Medicare's customary, prevailing and reasonable (CPR) system for determining physician payment since it is possible for local surgical fees to vary to reflect the components of the global service in each carrier area. If this occurs, it could explain some of the variation in Medicare payment for surgery. Currently, surgeons receive substantially different fees for performing the same operation in different parts of the country (Burney, 1978; OTA, 1986; PPRC, 1988). Only a fraction of this variation can be explained by geographic differences in the cost of practice (PPRC, 1989).

Multiple global service policies could not be accommodated, however, if the current CPR system was replaced with a fee schedule based on a national relative value scale (PPRC, 1989). With a national fee schedule, only one relative value would be assigned to each surgical code. This value would not be equitable if it applied to different packages of component services entailing different resource costs in different parts of the country.

To date, there has been no documentation of the extent of variation in Medicare carrier global service policies¹ or of the relationship between carrier policies and surgical payment. In this paper, we examine Medicare global service policies and Medicare payment for four common operations. First, we document the component services that carriers include in their global fees for each of these operations. Next, we analyze the variation in allowed charges for each of these operations (controlling for geographic differences in the cost of practice and market factors) to see if it can be explained by the extent of services included

¹ In 1987, the Health Insurance Association of America, the Blue Cross and Blue Shield Association, and HCFA surveyed their carriers about surgical global services. The results of this survey have not yet been reported.

in the surgical global fee. Finally, we discuss the implications of ^{the} our findings for Medicare payment under the current CPR system and a national fee schedule. *are discussed*

II. METHODS

Survey of Medicare Carriers

In June 1988 the Physician Payment Review Commission conducted a survey of the 26 Blue Shield carriers and nine commercial carriers who administer Part B payment for the Medicare program. In this survey, carriers were asked to indicate all of the component services they include in their global fee for four operations that are performed frequently in the Medicare population: total hip replacement (HIP), transurethral resection of the prostate (TURP), coronary artery bypass graft (CABG), and permanent pacemaker insertion (PACE).² All but one of the carriers responded to the survey. The information obtained accounts for 55 of the 56 Medicare carrier areas and encompasses 49 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands.³

The list of component services used in the survey instrument was generated from two sources. Urologists, orthopedic surgeons, and cardiothoracic surgeons recommended by the American College of Surgeons participated in a preliminary survey to identify all services that a principal surgeon might provide in association with each of the four operations. In addition, data prepared by Janet Mitchell, Ph.D.,⁴ from the 1986 Part A and Part B claims files were used to identify all services performed in the perioperative timeframe (from seven days prior through 90 days following each of these operations) for which principal surgeons were allowed additional payment by Medicare.

The survey instrument consisted of separate questionnaires for HIP, TURP, CABG, and PACE. The component services for each operation were divided into seven categories: consultation, preoperative visits, postoperative visits, nonoperative technical procedures, intraoperative services, ancillary operations, and services related to complications. Utilization review personnel employed by each carrier were asked to indicate all of the services included in the principal surgeon's global fee for each operation. They were also

² Specifically, the survey obtained information about total hip replacement (CPT codes 27130-27138), transurethral resection of the prostate (CPT code 52601), coronary artery bypass graft (CPT codes 33510-33516), and the insertion of a permanent pacemaker with transvenous electrodes (CPT codes 33206-33208).

³ The Maryland carrier was unable to participate because its global service policy was under review at the time of the survey. The carrier for Puerto Rico and the U.S. Virgin Islands provided information only about visits and consultations since the technical component of its global service policy was under development at the time of the survey.

⁴ Janet Mitchell, Ph.D., Center for Health Economics Research.

asked to note any constraints if the inclusion of a service was limited by number or by time in relation to surgery. Carriers administering multiple areas were asked to fill out separate survey instruments if they used a different policy in each area.

Physician "Work" Entailed in Carrier Global Service Policies

To compare policies that include very different component services, we calculated the average amount of physician work⁵ each Medicare carrier's global service for HIP, TURP, CABG and PACE entails. As a starting point, we used the total (global) work values assigned to these operations in Phase I of the National Study of Resource-Based Relative Value Scales for Physician Services (Hsiao, 1988). These values are based on physicians' estimates of the typical work involved in providing a global service consisting of the following components: the hospital admission work-up and hospital visits before the operation; dressing, scrubbing and waiting before the operation; the primary operation; immediate postoperative care in the recovery room; postoperative follow-up on the day of surgery; and postoperative visits in the hospital. Since this global service definition differs from that used by most Medicare carriers, we adjusted the Hsiao global work value for each operation to make it correspond to the specific component services (technical procedures and evaluation/management services) included in each carrier area.

Carrier-specific adjustments to the Hsiao global work value for each operation were made by adding total work (TW) values for all component services included in the carrier's global service but not in Hsiao's, and by subtracting TW values for all component services included in the Hsiao global service but not in the carrier's. In making these adjustments, we assumed that the "typical" visit patterns and usual intraoperative services for HIP, TURP, CABG, and PACE were those specified by consultants representing surgical specialty societies. We also assumed that the initial consultation by the principal surgeon, nonoperative technical procedures, and ancillary operations not encompassed by the CPT code for the primary operation were excluded from the Hsiao global service definition. In calculating global service work, we used TW values assigned to component services in Phase I of the Hsiao study. For the few component services that had not been assigned TW values in that study, we extrapolated values based on average Medicare submitted charges and the implicit work/charge relationship within a family of closely related codes (PPRC, 1989).

Since some of the technical procedures included in a global service are provided only for a subset of patients, we weighted the TW values to account for the frequency with which each of these procedures is performed in association with its primary operation. Actual

⁵ In the Hsiao study, physician work was shown to be a function of time, technical skill and physical effort, mental effort and judgment, and stress due to iatrogenic risk and/or complications. These researchers used magnitude estimation to obtain quantitative measures of relative physician work for a variety of services (Hsiao, 1988).

performance data is not available. Therefore, we used as a proxy the national average frequency with which principal surgeons were allowed payment by Medicare for providing technical procedures perioperatively in association with HIP, TURP, CABG, or PACE in 1986.⁶ The use of this proxy may underestimate the true range of work associated with the policies for each operation. Since surgeons do not always submit a bill for each procedure, and since carriers do not allow additional payment for procedures included in the global fee, this frequency is likely to be lower than the frequency with which each service is actually performed in association with the primary operation. Thus, the average global service work involved in policies with a large number of technical procedures may be higher than our calculations suggest.

Allowed Charges

We used the 1986 Part B Medicare Annual Provider File III (BMAD III) to determine the mean allowed charge⁷ for HIP (CPT code 27130), TURP (CPT code 52601), CABG (CPT code 33512), and PACE (CPT code 33207) in each carrier area.⁸ Since Medicare carriers differ in the specialties they recognize for distinct payment, we included all claims by "appropriate" specialists: orthopedic surgeons, general surgeons, and "clinic"⁹ for HIP; urological surgeons, general surgeons, and "clinic" for TURP; and thoracic surgeons, general surgeons, cardiologists and "clinic" for CABG and PACE. Claims by assistants at surgery and claims for unusual services were excluded. BMAD III is limited to claims from a 5 percent sample of Medicare providers. Thus, adequate data is available only for carrier areas in which an operation is performed frequently. The analysis is based on 49 areas for HIP, 45 for TURP, 44 for PACE, and 29 for CABG. The fewer carrier areas for CABG reflects the fact that this operation is performed primarily in larger hospital centers.

⁶ This part of the analysis was performed by Janet Mitchell, Ph.D., of the Center for Health Economics Research.

⁷ Under the CPR system, the allowed charge is the lowest of the customary, prevailing, or submitted charge.

⁸ In our analysis of the relationship between allowed charges and global service work we use geographic multipliers to control for geographic differences in the cost of practice. We used BMAD III (provider file) rather than BMAD I (procedure file) to determine allowed charges because zip code information on this file allowed us to better match geographic multipliers to the location of service.

⁹ In the BMAD file, "clinic" usually refers to a multi-specialty group submitting bills under a common identifier number.

III. RESULTS

Component Services Included in the Surgical Global Fee

All Medicare carriers base payment for surgery on a global definition that includes both evaluation and management (EM) and technical services. But the 44 distinct global service policies identified in this survey include different component services within each category (Table 1) and limit the inclusion of these services by imposing different constraints (site, number, or time in relation to surgery). Among EM services, carriers may or may not include the initial consultation by the principal surgeon, preoperative visits in the hospital and/or office, and postoperative visits in the hospital and/or office. Among the technical services, they may or may not include any of a number of specific nonoperative procedures, intraoperative procedures, and ancillary operations. In addition, carriers may or may not include EM services and/or technical procedures related to complications. In contrast to the variation among carriers in their policies for any given operation, each carrier's policy tends to be internally consistent for the four operations studied.

Table 1. Potential Components of the Surgical Global Service

<u>Evaluation and Management Services</u>	<u>Technical Services</u>
Initial consultation	Nonoperative diagnostic and therapeutic procedures
Preoperative visits	Intraoperative procedures
Postoperative visits	Ancillary operations
<u>Services Related to Complications</u>	
Emergency room visits	
Intensive care visits	
Nonoperative procedures	
Reoperation	

Evaluation and Management Services. For most surgery performed on the Medicare population, the initial consultation by the principal surgeon is not included in the surgical global fee (Table 2). This service is excluded from the global service in 62 to 64 percent of the carrier areas, depending on the operation. It is included conditionally in 32 to 38 percent of the areas, most commonly if performed within three days of surgery (regardless of site). It is a usual part of the global service in, at most, 4 percent of the carrier areas.

Table 2. Carrier Policies Regarding Inclusion of the Initial Consultation in the Surgical Global Service

	<u>Percent of 55 Medicare Carrier Areas</u>			
	<u>HIP</u>	<u>TURP</u>	<u>CABG</u>	<u>PACE</u>
Always Included	2	0	0	4
Sometimes Included	36	38	38	32
Within 3 days of operation	18	18	18	16
In hospital only	4	4	4	2
Other	14	16	16	14
Never Included	62	62	62	64

Medicare carriers are more likely to include nonconsultative preoperative visits in their surgical global fees (Table 3). These visits are part of the global service in 47 to 49 percent of the carrier areas, depending on the operation. But the visits that are included vary substantially by site and by timeframe. In 24 percent of the carrier areas, preoperative visits are included if they are provided in the hospital or in the office, whereas in 24 to 25 percent of the areas they are limited to the hospital setting. The most common preoperative timeframe, regardless of site, is three days. Preoperative visits provided within three days of surgery are included in the global service in 32 to 34 percent of the carrier areas. Emergency room visits that occur prior to the operation are not usually considered part of the surgical global fee. In 47 percent of carrier areas, the consultation and all preoperative visits are excluded from the global fee. In these areas, the global service begins at the time of surgery.

Table 3. Carrier Policies Regarding Inclusion of Preoperative Visits in the Surgical Global Service

<u>Included Visits</u>	<u>Percent of 55 Medicare Carrier Areas</u>			
	<u>HIP</u>	<u>TURP</u>	<u>CABG</u>	<u>PACE</u>
Hospital and Office	24	24	24	24
Within 3 days of operation	16	16	16	16
More than 7 days preop	2	2	2	2
Other	6	6	6	6
Hospital Only	25	24	25	24
Within 3 days of operation	18	18	18	16
More than 7 days preop	2	0	0	2
Other	6	6	7	6
No Preoperative Visits	51	53	51	53

Virtually all carriers include postoperative visits in their surgical global fees (Table 4). The vast majority include postoperative visits provided in both the hospital and office, reflecting the generally accepted view that the surgeon is responsible for a patient's care until he or she is recovered from surgery. The specific timeframes constraining postoperative visits vary, but 180 days is used most commonly for HIP, 90 days for TURP and CABG, and 30 days for PACE. These timeframes are identical to those used in the

1974 California Relative Value Study (CRVS). In 18 to 20 percent of the carrier areas, postoperative visits are limited to the hospital setting. The most common timeframe constraining this type of policy is 14 days. In 24 percent of the carrier areas, the same postoperative timeframe is applied to all four operations.¹⁰

Table 4. Carrier Policies Regarding Inclusion of Postoperative Visits in the Surgical Global Service

<u>Included Visits</u>	<u>Percent of 55 Medicare Carrier Areas</u>			
	<u>HIP</u>	<u>TURP</u>	<u>CABG</u>	<u>PACE</u>
Hospital and Office	82	80	78	64
1 - 14 days postop	9	11	9	11
15 - 30	7	7	7	35
31 - 42	4	0	2	0
43 - 90	2	58	58	16
91 - 180	44	0	0	0
180 + days	16	4	2	2
Hospital Only	18	20	20	18
No Postoperative Visits	0	0	2	18

Although the EM services included in the global fee for any one operation vary in different carrier areas, each Medicare carrier appears to include similar EM services in its global fee for different operations (Table 5). In 42 percent of the carrier areas, the global service policies for HIP, TURP, CABG, and PACE include the same categories of EM services, and the services in each category are characterized by the same constraints (site, number, or time in relation to surgery).¹¹ When a carrier is inconsistent with regard to EM services, it is usually because it has different policies for postoperative visits, especially for PACE. In 18 percent of the carrier areas, PACE is treated as an isolated procedure rather than as a global service, perhaps because PACE is more likely to be performed by nonsurgeons (cardiologists) or by teams of surgeons and nonsurgeons. If this operation is excluded from the analysis, EM policies for the remaining three operations are consistent in 65 percent of the carrier areas.

¹⁰ In 31 percent of the carrier areas, the same postoperative timeframe is applied to HIP, TURP, and CABG.

¹¹ Of the carrier areas with consistent postoperative visit policies, 50 percent use the same timeframe for each operation and 50 percent use the CRVS timeframe for each operation. The CRVS timeframe is used more commonly by carriers in the West and South.

Table 5. Intracarrier Consistency Regarding EM Services Included in the Surgical Global Service

EM Service	Percent of 55 Medicare Carrier Areas			
	Policies for HIP, TURP, CABG, PACE		Policies for HIP, TURP, CABG	
	Consistent	Inconsistent	Consistent	Inconsistent
Consultation	91	9	95	5
Preoperative Visits	91	9	96	4
Postoperative Visits	47	53	69	31
Entire EM Policy	42	58	65	35

Technical Procedures. The findings related to technical procedures are summarized in Table 6 and presented in more detail in Appendices 1 and 2. The Appendices include all of the services (with their corresponding CPT codes) listed on the questionnaires. Nonoperative diagnostic and therapeutic procedures for HIP, TURP, CABG, and PACE are presented in Appendix 1A-D, respectively. Intraoperative services including ancillary operations are presented in Appendix 2A-D. Since some operations are more commonly associated with technical services than others, the number of services as well as the proportion of services directly related to the primary operation is different for HIP, TURP, CABG, and PACE.

Most Medicare carriers include technical services as well as EM services in their surgical global fees. But policies in different areas vary widely in terms of the specific diagnostic and therapeutic procedures, intraoperative procedures, and ancillary operations included in the global fee for any given operation. Technical services commonly performed in association with an operation tend to be included in the global fee more often than those that are not. But some carriers exclude common procedures from the global service while others include services that are performed infrequently or that are unrelated to the primary operation.

Most Medicare carriers do not include nonoperative diagnostic and therapeutic procedures in their surgical global fees (Table 6 and Appendix 1). This policy is very common (87 and 83 percent of areas) for HIP and PACE, which may reflect the small number of related nonoperative procedures associated with HIP and the nonglobal treatment of PACE by some carriers. But it is also prevalent (57 and 68 percent of carrier areas, respectively) for TURP and CABG, which are more frequently associated with these types of services. In carrier areas not following this policy, the nonoperative procedures most likely to be included are those most commonly associated with a given operation (such as the change of a cystostomy tube with TURP or the removal of an aortic balloon with CABG). Nonetheless, even these procedures are included in no more than 25 percent of the areas.

It is very rare for Medicare carriers to include all services performed at the time of surgery in their global service policies (Table 6 and Appendix 2). The majority include services that are a usual and necessary part of the primary operation (such as the insertion of a chest tube with CABG) but exclude infrequent or unrelated services (such as the repair of an abdominal aortic aneurysm with CABG). However, in some carrier areas,

Table 6. Carrier Policies Regarding Inclusion of Technical Procedures in the Surgical Global Service

	<u>Percent of 53 Medicare Carrier Areas</u>			
	<u>HIP</u>	<u>TURP</u>	<u>CABG</u>	<u>PACE</u>
Diagnostic and Therapeutic Nonoperative Procedures				
All included	2	2	2	2
Some included	11	41	30	15
None included	87	57	68	83
Intraoperative Procedures and Ancillary Operations				
All included	0	6	2	32
Some included	92	92	91	49
None included	8	2	7	19

surgeons can bill and presumably would receive additional payment for services that are an integral part of the primary operation (such as exploration of the hip joint with HIP) or for intraoperative services that are included in the description of the CPT code (such as a cystourethroscopy at the time of a TURP).

As with EM services, each Medicare carrier appears to be relatively consistent with regard to the technical services included in the global fee for different operations. A carrier that includes a high proportion of technical services for HIP does so for TURP, CABG, and PACE as well. A carrier that excludes most technical procedures from the global fee for one operation also excludes them from the others. But there is little correlation between the EM and technical portions of each carrier's policy. Carriers with a very global approach to EM services sometimes include few technical services in their global fees, and those including a high proportion of technical services sometimes include few EM services.

Services Related to Complications. Carriers treat EM and technical services differently in their policies related to complications from surgery (Table 7). All visits provided by the principal surgeon within the specified postoperative timeframe tend to be included in the global fee whether they are routine or related to complications. In 67 to 71 percent of the carrier areas, depending on the operation, the surgeon is not entitled to additional payment for visits in the intensive care unit following HIP, TURP or CABG. In contrast, technical procedures and operations related to complications are excluded from these surgical global services in 53 to 72 percent of the carrier areas.¹²

¹² Carriers treat complications related to PACE differently from other operations. Intensive care visits are included in 53 percent of the carrier areas and additional surgery and procedures related to complications are excluded in 45 percent of the areas.

Table 7. Carrier Policies Regarding Inclusion of Services Related to Complications in the Surgical Global Service

	Percent of Medicare Carrier Areas*			
	<u>HIP</u>	<u>TURP</u>	<u>CABG</u>	<u>PACE</u>
Intensive Care Visits Included	71	69	67	53
Technical Procedures and Reoperation				
All included	9	17	19	21
Some included	19	30	17	34
None included	72	53	64	45

*Percent of 55 Areas for Visits

Percent of 53 Areas for Technical Services

Physician "Work" Entailed in Carrier Global Service Policies

The Carrier Survey documents extensive variation in the component services that can be included in a Medicare surgical global fee. For example, in one carrier area, the allowed charge for a TURP covers the basic operation, up to two weeks of postoperative hospital care, and, if required, correction of one specific surgical complication. In another, the payment covers the surgical consultation prior to the operation, up to three days of preoperative visits in the office and hospital, extensive intraoperative services, any of seven ancillary operations that may be performed at the time of a TURP, three months of postoperative visits in the hospital and office, and, if required, surgery for complications.

To compare policies that include very different component services, we calculated the average amount of physician work encompassed by the HIP, TURP, CABG, and PACE global service in each carrier area (Table 8). The policies for PACE are associated with the broadest range of work (230 percent). This is to be expected since, as mentioned above, some carriers treat PACE as an isolated procedure rather than as a global service. The variation for the other operations is smaller but still substantial: 52 percent for TURP, 37 percent for HIP, and 23 percent for CABG.¹³

We were unable to explain the variation in global service work on the basis of geography or type of carrier. For each operation, there is as much variation in global service work among carrier areas within a geographic census region as across regions. There is also no significant difference in mean global service work or the range of global service work for each operation when comparing the policies of Blue Cross/Blue Shield and commercial carriers.

¹³ As discussed under Methods, we may have underestimated the average physician work in policies including a large number of technical procedures. Therefore, the range of work for each operation may be greater than reported.

Table 8. Global Service Work Encompassed by Medicare Carrier Policies

	<u>HIP</u>	<u>Relative Work Units</u>		<u>PACE</u>
		<u>TURP</u>	<u>CABG</u>	
Mean Global Service Work (53 carrier areas)	2635	1533	3172	709
Standard Deviation	234	158	182	165
Min/Max	2245/3068	1241/1884	2856/3518	484/1115

Relationship Between Allowed Charges and Global Service Work

Our analysis demonstrates that surgeons are allowed substantially different payment by Medicare when they bill for the same operation in different carrier areas (Table 9). Of the four operations we studied, PACE is associated with the broadest range in allowed charges (410 percent). But the range is also extensive for HIP (210 percent), TURP (230 percent), and CABG (250 percent).

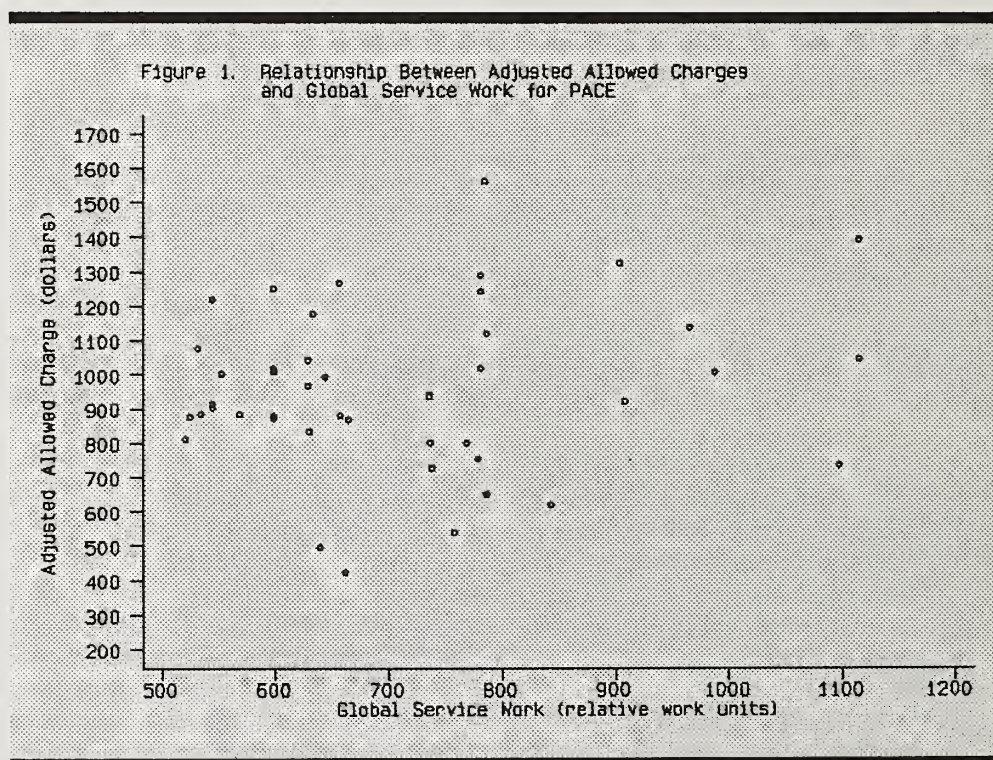
Table 9. Medicare Allowed Charges for Surgical Global Services

	<u>HIP</u>	<u>TURP</u>	<u>CABG</u>	<u>PACE</u>
Unadjusted Allowed Charge (\$)				
Mean	2274	1050	3787	946
Standard Deviation	435	232	856	267
Min/Max	1660/3470	764/1780	2352/5775	412/1692

We used linear regression to see if the variation in allowed charges can be explained by differences in the extent of services included in the surgical global fee. Regressions for each of the four operations were performed separately with Medicare carrier areas as the units of observation. The dependent variable in each analysis was the mean allowed charge for the operation in each carrier area. One independent variable was the value of global service work corresponding to the specific services included in the policy for the operation in each carrier area. Additional independent variables were introduced to control for: (1) the ratio of surgeons (in appropriate specialties) to population in each carrier area; (2) the proportion of each operation performed in urban sections of each carrier area; and (3) geographic differences in the cost of practice (office space, salaries of nonphysician employees, medical equipment and supplies, and professional liability insurance) and professional earnings among Medicare carrier areas.¹⁴

¹⁴ Using data from the Urban Institute and the Center for Health Economics Research (Zuckerman, 1987), we developed modified "cost of practice" and "professional earnings" multipliers for each Metropolitan Statistical Area (MSA) and the nonmetropolitan residual area of each state (PPRC, 1989). We then weighted these multipliers by the number of operations performed in each MSA and nonmetropolitan area to calculate average "cost of practice" and "professional earnings" indexes for each carrier area. These indexes were the independent variables in the analysis.

Contrary to what one might expect, payment for the operations in our study does not appear to be positively correlated with the extent of services included in each carrier's policy (Table 10). The relationship between allowed charges and global service work is weak and not statistically significant for HIP, TURP, and PACE, even after controlling for differences in the cost of practice and market factors.¹⁵ This means that, for each of these operations, surgeons in different carrier areas are receiving substantially different payment from Medicare for performing global services that entail the same amount of work. For example, the allowed charge for PACE (adjusted for geographic differences in the cost of practice and professional earnings) ranges from \$600 to \$1600 for a PACE global service involving 800 units of work (Figure 1). It also means that surgeons are receiving the same payment from Medicare for performing global services that entail very different amounts of work. A \$1000 adjusted allowed charge is associated with PACE global services involving from 550 to 1100 units of work (Figure 1).



¹⁵ As discussed under Methods, we may have underestimated global service work in carrier areas including a large number of technical procedures in their policies. But it is unlikely that this underestimation affected our results since there was no significant relationship between allowed charges and a dummy variable identifying these areas in the regressions.

In contrast to HIP, TURP and PACE, the relationship between payment and global service work is significant for CABG (Table 10). But in this case the correlation is negative. Thus, on average, surgeons are allowed less payment from the Medicare program when they provide more extensive services in association with a CABG and more payment when they provide less extensive services.

Table 10. Regression for Allowed Charges

Variable	Coefficient			
	HIP	TURP	CABG	PACE
Intercept	-879.10	-529.16	5483.75**	-311.05
Practice Costs	3142.49***	1281.99***	4791.19***	2141.75***
Professional Earnings	454.48	399.37	1082.00	-810.89
Global Service Work	-.02	.01	-2.12**	.33
Surgeons per 1000 population	-25.75	0.78	-35.67	-15.81
Urban Proportion of Surgery	-3.18*	-1.61	-1.45	-.07
R ²	.51***	.45***	.48***	.24*

* Significant at .10

** Significant at .05

*** Significant at .01

DISCUSSION

This is the first study documenting the specific component services that Medicare carriers include in their global fees for surgery. Our findings suggest that each carrier is relatively consistent in the way it defines a global service for different operations. But there is substantial variation among carriers in the way a global service is defined for any given operation. Currently, at least 44 different policies are used to implement payment for surgical global services in the Medicare program. Thus, each surgical CPT code may represent any one of 44 different combinations of component services, depending on the carrier area in which it is used.

Although the Medicare program was initially designed to be responsive to local differences in practice style, it is difficult to account for the multiplicity of global service policies on this basis. With the exception of the CRVS timeframe for defining postoperative visits, which is used predominantly by carriers in the West and South, we were unable to correlate differences in policy with geographic regions. Moreover, we found that policies are uniform within large and diverse carrier areas. Thus, many of the 44 policies pertain to a wide variety of practice styles (surgery performed by academic and private surgeons practicing in urban and rural settings).

Theoretically, the CPR system can accommodate variable global service policies since payment can vary to reflect the component services in each carrier area. However,

although our study shows extensive variation in payment as well as global service policies among Medicare carrier areas, we did not find a significant positive correlation between the allowed charge for each of the four operations and the extent of services included in the surgical global fee. The amount of work involved in the global service for each operation varies substantially -- by 600 to 800 units among carrier areas. (This is equivalent to the amount of work involved in performing a complete PACE global service). Nonetheless, surgeons providing a global service involving 600 more units of work are not necessarily receiving more payment from the Medicare program. In fact, for CABG, they are receiving, on average, almost \$1300 less. These findings are consistent with observations by other researchers. Using 100 percent claims data from 10 states, Mitchell and colleagues showed that fees for CABG are higher in areas where surgeons submit more bills for ancillary perioperative services (i.e. where fewer services are included in the CABG global service) (Mitchell, 1988).

Our study suggests that 49 to 76 percent of the current variation in Medicare payment for surgery is not reasonable in that it cannot be explained by geographic differences in practice costs, professional earnings, global service policies, or market factors. To rationalize the pattern of payments, the Physician Payment Review Commission recently proposed a Medicare Fee Schedule, in which payment to physicians would be based primarily on resource costs. But to ensure equitable payment, a national fee schedule would require the adoption of a uniform global service policy. Otherwise the relative value assigned to each surgical code would be applied to different combinations of component services entailing different resource costs in different Medicare carrier areas.

The Commission recently convened a consensus panel of surgeons and carrier representatives to develop a uniform global service policy (PPRC, 1989). This policy consists of all preoperative hospital visits provided by the principal surgeon on the day before and day of surgery, all intraoperative services performed by the principal surgeon that are a usual and necessary part of the operation, minor perioperative procedures commonly performed in association with most operations, and all related institutional and outpatient visits provided by the principal surgeon in the 90 days following surgery (including visits related to complications of surgery). The surgical consultation, most pre- and postoperative technical procedures, unusual intraoperative services, and additional operations not encompassed by the CPT code for the primary operation are excluded.¹⁶

The Commission's policy is consistent with the current practice of the majority of Medicare carriers. Although carriers differ substantially in their overall policies, the Carrier Survey identifies a dominant approach to each component of the surgical global service. Thus, most carriers include postoperative hospital and office visits (90 days is the dominant timeframe for most operations) and the usual and necessary intraoperative services in the global fee, but exclude the initial consultation, preoperative visits, most nonoperative technical procedures, and additional surgery related to complications. With the exception of its more global approach to preoperative visits, the Commission's policy reflects current carrier practice closely. It also reflects current billing practices by

¹⁶ Additional operations performed at the time of the primary operation but not encompassed by the CPT code for the primary operation are to be reimbursed at rates less than their full global fee to reflect the savings in resource costs that is achieved when two operations are performed through the same incision or at the same time and when postoperative care is provided concurrently.

surgeons. According to a recent study, surgeons are highly likely to include follow-up office visits in their global fee, but much less likely to include preoperative office visits (Rosenbach, 1988).

Implementation of the Commission's policy in the context of a Medicare fee schedule would provide physicians with rational and equitable payment for their surgical services. Since one policy would be used by all Medicare carriers, the relative work value assigned to each operation would apply to the same combination of component services in all carrier areas. And since the Commission's policy is designed to facilitate the assignment of accurate relative work values to surgical global services (PPRC, 1989), the fee for each global service would reflect the work involved in providing all of the included component services. With additional adjustments for geographic differences in practice costs, this system, unlike the current CPR system, would result in Medicare payment that accurately accounts for the resource costs of surgery.

REFERENCES

Burney, I., G. Scheiber, M. Blaxall, et al., "Geographic Variation in Physicians' Fees," *Journal of the American Medical Association* 240(3):1368-71, 1978.

Hsiao, W.C., P. Braun, E. Becker, et al., A National Study of Resource-Based Relative Value Scales for Physician Services: Final Report, Harvard School of Public Health, September 1988.

Mitchell, J.B., S.M. Davidson, and S. Hurdle, "Geographic Variation in Surgical Fees," Draft Report prepared under HCFA Grant No. 17-C-98999/1, Needham, MA: Center for Health Economics Research, October 1988.

Office of Technology Assessment, U.S. Congress, Payment for Physician Services, Strategies for Medicare, OTA-H-294, U.S. Government Printing Office, Washington, D.C. February 1986.

Physician Payment Review Commission, Annual Report to Congress Washington, D.C., 1988.

Physician Payment Review Commission, Annual Report to Congress Washington, D.C., 1989.

Rosenbach, M.L., "Surgeons' Billing Practices for Selected Surgical Procedures," Final Report Prepared under HHS Contract No. 100-86-0023, Needham, MA: Health Economics Research, Inc., February 1988.

Zuckerman, S., W.P. Welch, and G.C. Pope, "The Development of an Interim Geographic Medicare Economic Index," Interim Report prepared under HCFA Grant No. 17-C-98758/1-03, Urban Institute and Center for Health Economics, December 1987.

APPENDIX 1

DIAGNOSTIC AND THERAPEUTIC NONOPERATIVE PROCEDURES INCLUDED IN THE SURGICAL GLOBAL SERVICE

APPENDIX 1A

DIAGNOSTIC AND THERAPEUTIC NONOPERATIVE PROCEDURES

INCLUDED IN THE GLOBAL SERVICE

TOTAL HIP REPLACEMENT

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
20600-20610	Arthrocentesis, major joint	17
72170-72190	Radiologic exam, pelvis	4
73500-73530	Radiologic exam, hip	4
73550	Radiologic exam, femur	4
27370	Injection, knee X-Ray	4

APPENDIX 1B

DIAGNOSTIC AND THERAPEUTIC NONOPERATIVE PROCEDURES

INCLUDED IN THE GLOBAL SERVICE

TRANSURETHRAL RESECTION OF THE PROSTATE

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
51705-51710	Change of bladder tube	25
52000-52010	Cystourethroscopy (nonoperative)	23
51700	Irrigation of bladder	21
51600-51610	Injection proc., bladder	11
45330-45337	Sigmoidoscopy	11
51725-51726	Cystometrogram	9
45355-45385	Colonoscopy	9
45300-45321	Proctosigmoidoscopy	8
51785	Anal/urinary muscle study	8
46600-46614	Anoscopy	8
51736	Urine flow measurement	6
51741	Uroflowmetry	6
50394	Injection for kidney X-ray	2

APPENDIX 1C

DIAGNOSTIC AND THERAPEUTIC NONOPERATIVE PROCEDURES

INCLUDED IN THE GLOBAL SERVICE

CORONARY ARTERY BYPASS GRAFT

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
33971	Removal/repair of balloon	21
33972	Monitor aortic balloon	18
33970	Insertion intraortic balloon	17
36620-36625	Insertion systemic arterial monitoring	15
75750-75775	Coronary angioplasty	15
93536	Percutaneous insertion arterial balloon	13
36010	Insertion Swan/Ganz catheter	11
92960	Cardioversion	11
93501-93528	Cardiac catheterization	11
92975	Coronary thrombosis	9
93547-93562	Coronary angiography w/catheterization	6
92982-92984	Percutaneous transcoronary angioplasty	6
93000-93010	Electrocardiogram	6
93015-93018	Cardiac stress test	2

APPENDIX 1D

DIAGNOSTIC AND THERAPEUTIC NONOPERATIVE PROCEDURES
INCLUDED IN THE GLOBAL SERVICE

INSERTION OF PERMANENT PACEMAKER WITH TRANSVENOUS ELECTRODES

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
93258-93269	Electrocardiographic monitor	9
93040-93045	Rhythm EKG	8
93000-93010	Electrocardiogram	6
93501-93528	Heart catheterization	4
93600-93618	Intracardial electrophys. procedures	4
93545-93553	Heart catheter and angiography	2

APPENDIX 2

INTRAOPERATIVE PROCEDURES AND ANCILLARY OPERATIONS

INCLUDED IN THE SURGICAL GLOBAL SERVICE

APPENDIX 2A

INTRAOPERATIVE PROCEDURES AND ANCILLARY OPERATIONS

INCLUDED IN THE GLOBAL SERVICE

TOTAL HIP REPLACEMENT

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
27030-27033	Exploration of hip joint	89
27000-27006	Tenotomy	74
27125-27127	Hemiarthroplasty	72
27165	Osteotomy	72
27120-27122	Acetabuloplasty	70
20670-20680	Removal of Implant	68
27090-27091	Removal of hip prosthesis	68
27054	Arthrotomy for synovectomy	66
27062	Excision, trochanteric bursa	66
27306-27307	Tenotomy	58
27065-27067	Excision of cyst	58
27040-27041	Biopsy of soft tissue	57
27210-27259	Repair of fracture	57
27448-27450	Osteotomy, femur	55
27305	Fasciotomy	53
20690	Application of external fixation	53
27170	Bone graft	42
20900-20902	Bone graft	40
27360	Partial removal, leg bones	40
27500-27519	Treatment of femur fracture	36
27299	Unlisted procedure, hip/pelvis	28
23465	Repair shoulder capsule	0
23600	Treat humerus fracture	0
24585	Repair elbow fracture	0
25500-25611	Treat fracture radius/ulna	0
27445-27447	Revise knee joint	0
27486-27488	Total knee	0

APPENDIX 2B

INTRAOPERATIVE PROCEDURES AND ANCILLARY OPERATIONS

INCLUDED IN THE GLOBAL SERVICE

TRANSURETHRAL RESECTION OF THE PROSTATE

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
53000-53020	Urethrotomy/meatotomy	92
53670-53675	Insert urinary catheter	91
53605-53621	Dilation of urethra	89
52204-52340	Cystourethroscopy (intraoperative)	85
53640	Relieve bladder retention	75
52612-52614	Prostatectomy (TUR - 2 stage)	74
52650	Prostatectomy (cryo)	70
52320-52338	Cystourethroscopy w/other procedures	60
52700	Drainage of prostate abscess	58
52620-52630	Remove prostate residual or regrowth	57
55700-55705	Biopsy of prostate	56
55740	Removal of prostate stone	56
55821	Suprapubic prostatectomy	55
55200-55250	Vasotomy/vasectomy	55
51000-51010	Bladder aspiration	51
51010-51045	Cystotomy	49
55720	Drainage of prostate abscess	47
52640	Relieve bladder contracture	43
54000-54001	Slitting of prepuce	34
53235	Removal of urethral lesion	28
54100	Biopsy of penis	28
53899	Unlisted procedure, urinary	25
38760	Removal of groin lymph	19
51050-51065	Removal of bladder/ureter stone	17
54152-54161	Circumcision	17
55500	Excision of hydrocele	13

Appendix 2B -- (continued)

53410-53420	Urethroplasty	11
54860	Removal of epididymis	11
53215	Removal of urethra	8
54520-54530	Removal of testis/testes	6
54840	Removal of spermatocele	6
55000-55041	Drainage/removal of hydrocele	6
55175	Revision of scrotum	6
55540	Revise hernia and sperm veins	6

APPENDIX 2C

INTRAOPERATIVE PROCEDURES AND ANCILLARY OPERATIONS

INCLUDED IN THE GLOBAL SERVICE

CORONARY ARTERY BYPASS GRAFT

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
32095-32160	Thoracotomy	75
32020-32035	Chest tube	70
33310-33315	Exploratory heart surgery	64
33960	External circulation assist	60
39000-39020	Exploration of mediastinum	58
33570-33575	Coronary angioplasty	57
33010-33100	Heart sac incision/drainage/removal	57
33210	Insert temp. pacemaker	55
32402	Open biopsy chest lining	53
33503-33504	Anomalous coronary artery graft	51
34101-34201	Removal of artery clot	43
33212	Insertion of pulse generator	43
33999	Unlisted procedure, cardiac	26
33212	Insert pulse generator	26
33218-33232	Removal/repair of pacemaker	26
35301-35371	Rechanneling of artery	25
35201-35286	Repair blood vessel lesion	23
33200-33208	Insert permanent pacemaker	23
35501-35681	Noncoronary artery bypass graft	13
35450-35458	Noncardiac transluminal angioplasty	11
35081-35083	Aneurysm of abdominal aorta	11
35111-35162	Aneurysm, other arteries	11
35701-35761	Exploration of carotid/femoral/ other artery/vein	8
32440-32500	Partial/total lung removal	4

APPENDIX 2D

INTRAOPERATIVE PROCEDURES AND ANCILLARY OPERATIONS

INCLUDED IN THE GLOBAL SERVICE

INSERTION OF PERMANENT PACEMAKER WITH TRANSVENOUS ELECTRODES

<u>CPT CODE</u>	<u>PROCEDURE</u>	<u>PERCENT OF 53 CARRIER AREAS</u>
33216	Permanent transvenous electrodes	79
33212	Pulse generator	72
33219	Replacement of pulse generator	72
33210	Insertion of temporary pacemaker	72
33218	Repair of pacemaker	72
33232	Removal of pacemaker	57
33245	Insert auto. internal defibrillator	25

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